

What the heck's an Intellivision Amico? Console's leaky dev portal offers hints

Creators compare the \$250 crowdfunded console's power to a chip from a \$100 2016 smartphone.

Sam Machkovech - Jun 29, 2021 5:00 pm UTC



Enlarge / The latest render of the upcoming Intellivision Amico console, with our own question marks placed in each controller's embedded touch screen. A dev portal leak has helped us answer some, but not all, of the questions that remain ahead of the product's current announced release date of October 10, 2021, for \$249. Intellivision / Sam Machkovech

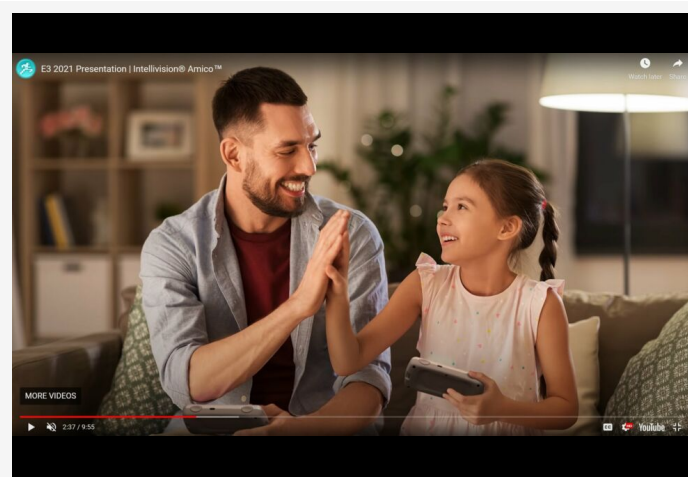
Since its announcement as a crowdfunded game console in 2018, the Intellivision Amico has had a weird public image. There have been many YouTube pronouncements about its family-friendliness, yet there are few concrete details that have convinced us it will stand out in an increasingly crowded home-gaming market. And this year, public scrutiny about the \$250 system (currently open for \$100 preorder "down payments" or full-price preorders, which include two controllers and six pack-in games) has grown, particularly after Intellivision joined the 2021 virtual E3-showcase fray—and did so with a resounding thud.

Thus far, the Amico has used video presentations to show what the company hopes will set this handheld apart from the pack. Those videos mostly originate from Intellivision and a few hand-picked fan YouTube channels. Until we can go hands on with live hardware ourselves, these videos leave us with question marks about dev kits and other potentially inauthentic presentations. Leaks from an Intellivision developer portal this week will have to suffice for now, as it's a great opportunity to finally take a closer look at what the heck an Intellivision Amico actually is.

"Exactly what stock photos are meant for"

I began closely watching the Amico once I noticed that its E3 2021 presentation video included unclear footage of how the device actually works. These "live gameplay" videos hint at Amico's central gimmick: gameplay happens primarily on a TV screen, but the device can also integrate content on an LCD screen embedded in every controller (controllers resemble Nintendo's Wii U, albeit with smaller gamepads). However, the E3 video cuts and pans so much that we can't tell if the Amico controllers are legitimately interacting with the nearby TV set.

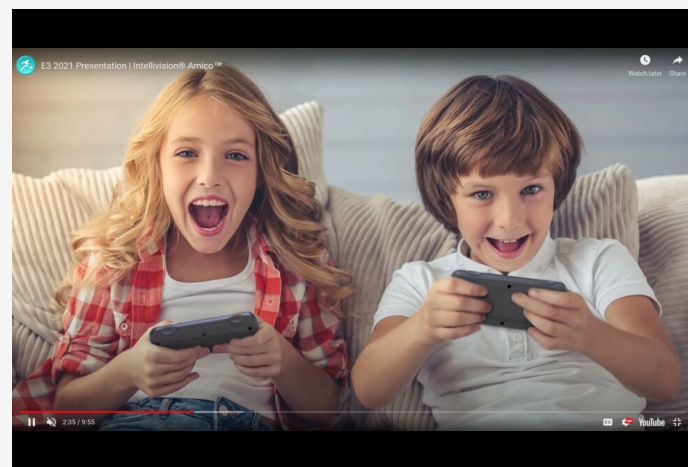
Older Amico videos have shown apparent lag between controller input and TV display—when those videos haven't hidden the controller from view altogether, that is. This recent E3 presentation did nothing to reduce concern on that front.



An image from Amico's E3 2021 presentation.



A similar image found by running a Google Image Search. Image used solely for the sake of comparison.



An image from Amico's E3 2021 presentation.



A similar image found by running a Google Image Search. Image used solely for the sake of comparison.

The E3 presentation included multiple stock images of happy families playing with Amico, and Intellivision CEO Tommy Tallarico later confirmed those images were doctored—DualShock-like controllers were digitally replaced with Amico's touchscreen-filled pads. [Tallarico defended the promotional choice on Twitter](#) by saying, "That is exactly what stock photos are meant for and why they exist."

Next to the stock photos was direct-feed footage of apparent Amico gameplay that looked simplistic and sometimes stuttering. It didn't inspire confidence in a price category that includes competent \$200 to \$300 options like the Nintendo Switch and Apple TV 4K. To picture it, imagine an online Flash gaming portal full of mostly flat, 2D game designs with a few 3D twists and visual flourishes, and you get some idea of Amico's visual aesthetic.

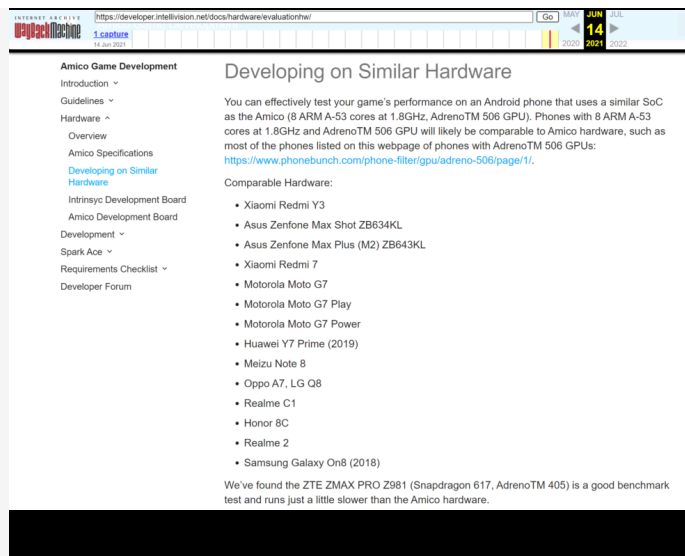
Perhaps a different sizzle-reel approach would have done a better job selling the Amico concept, and I don't envy any marketing department dealing with a pandemic-related expo drought where a physical demo might fill in these gaps. But for a console that revolves around [the lukewarm Wii U concept](#) of "gameplay on TV, extra screen in your hand," whose last announced launch date was October 10, 2021, it sure seems like time to release more details. This is especially true for a new, unproven hardware maker, since the Intellivision brand name was acquired in 2018 by an entirely new team.

“Smart Display 200” doesn't sound as cute as “Amico”

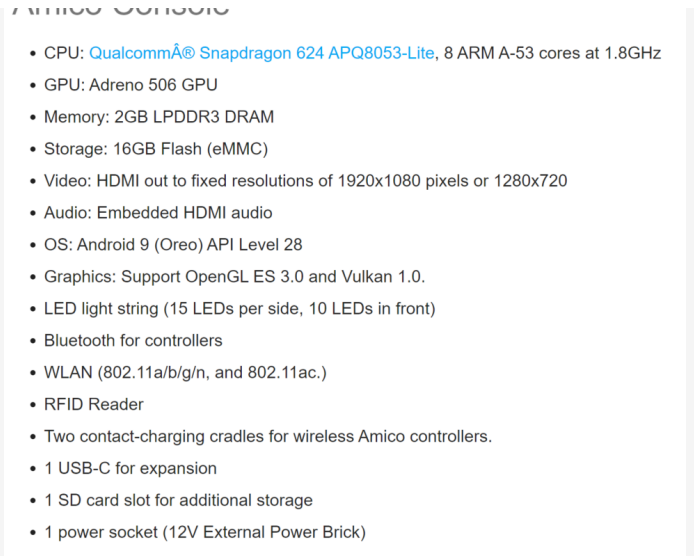
Intellivision has been frank that Amico was built with budget-priced gaming in mind. [Its official "specs" page](#) makes that clear, with performance numbers that resemble lower-powered Android smartphones. But this recent leak from Intellivision's online "developer" portal provided concrete specifics about how much hardware power this \$250 system and its controllers will eventually deliver.



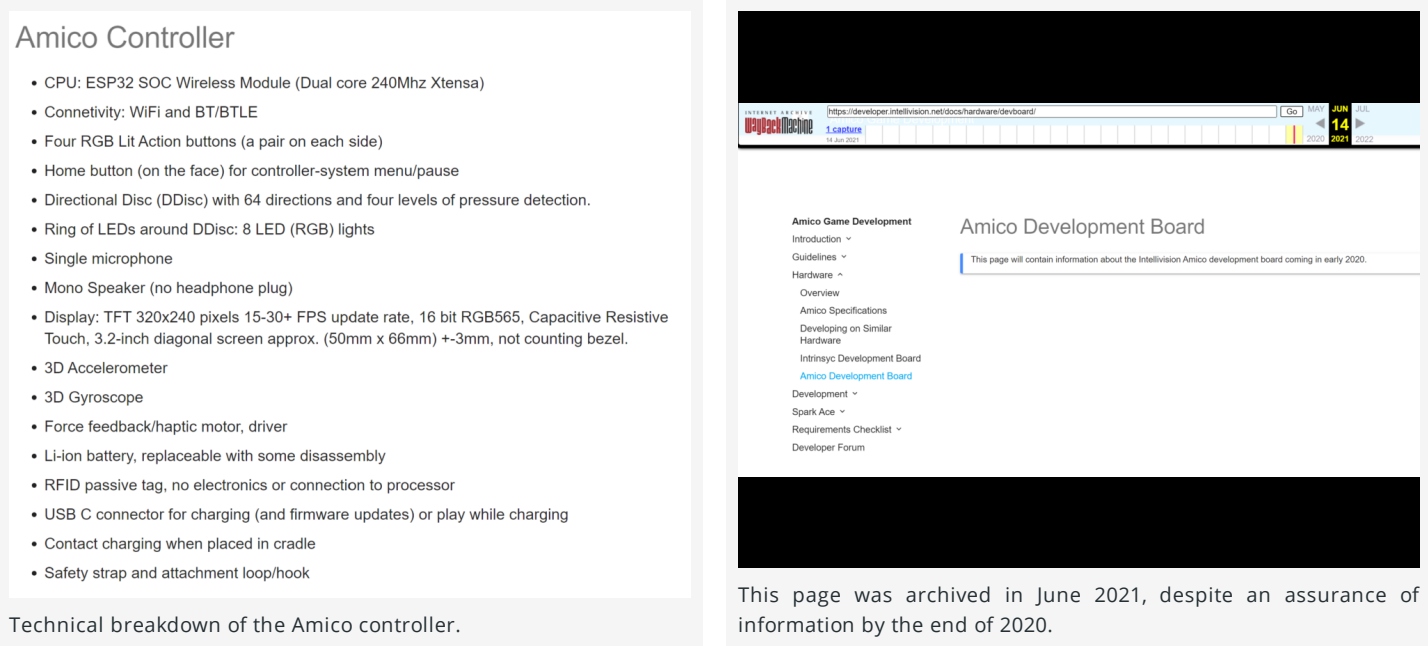
Amico Console



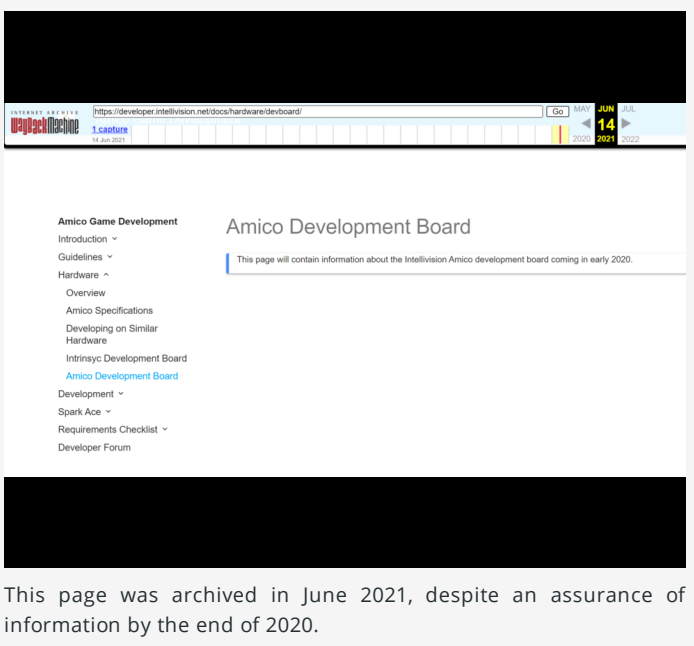
Specs and details about the upcoming Intellivision Amico console, as crawled from Intellivision.net in June 2021. This screenshot gallery begins with comparisons to existing budget smartphones.



Firm specs about the Amico console itself. Some of this information was already publicly announced, such as the eight-core, 1.8 GHz SoC.



Technical breakdown of the Amico controller.



How to Enable Input

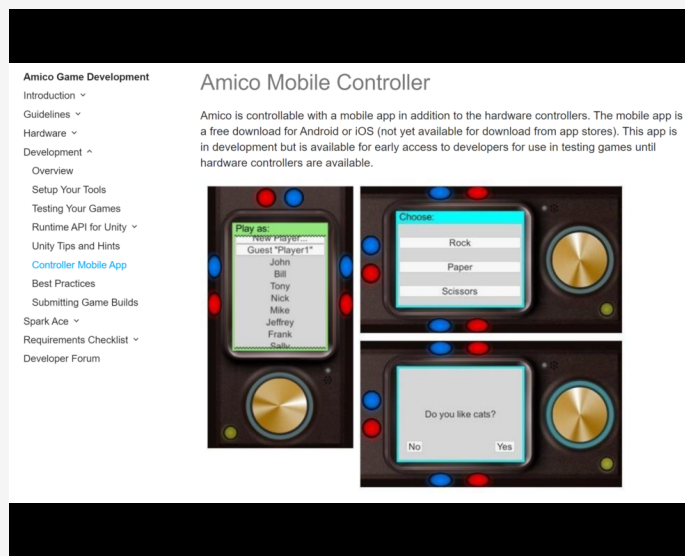
In order to preserve battery life on the controllers, some input features are turned off by default (in some cases, like the gyroscope, meaning actual hardware is turned off, in others cases meaning that the data is just not sent over the air). These are called optional input features, and you must enable them explicitly if you want to use them. Only the buttons are always on. The Disc is an optional input that is on by default (meaning it can and should be disabled if you will not use it). You control enabling of optional inputs by calling `AmicoSystem.Instance.SetOptionalControllerInputs(OptionalControllerInputs flags)` with bit-or of enumeration `OptionalControllerInputs` flags for the inputs you want enabled. This sets the input features for all controllers. You may also control enabling of input features on a per-player basis by calling `AmicoPlayer.SetOptionalControlsUsed(OptionalControllerInputs flags)`.

Be sure to disable any optional inputs you have enabled when they won't be needed for a while. This helps preserve battery life on the controller and reduce over-the-air radio traffic.

Optional Inputs are:

- Disc (on by default at start).
- DiscWheel (automatically enable Disc if you enable this, because it is the disc, just with additional processing enabled to calculate radial deltas)
- Touchscreen (for live touch coordinates; you don't need to enable to get events from your touchscreen dialogs)
- Gyroscope
- Accelerometer

Guidelines about Amico disabling controller features by default to



Amico will support smartphone connections to work as virtual controllers, which is admittedly a great way to bring more players in

without making them buy additional hardware.

save battery life.

The Intellivision developer portal was recently publicly available online, no password needed, for long enough to have the details [saved at archive.org](#) earlier this month. Sources with knowledge about Amico have confirmed to Ars Technica that the leaked specs we've seen were legitimate. While the specs were live as recently as June 14 and line up with Amico's own official specs page, they could still change between now and the system's launch.

The Intellivision developer portal includes precise specs for various system elements in order to help game makers begin building Amico software before they receive official dev kits. Before listing all of its specs, Intellivision's own comparison makes the point more simply:

We've found the ZTE ZMax Pro Z981 (Snapdragon 617, Adreno 405) is a good benchmark test and runs just a little slower than the Amico hardware.

This model of ZTE smartphone debuted in 2016 at a budget price point of \$100 unlocked—and that included a 13 MP camera sensor, a 6-inch, 1080p display, and a 3,400 mAh battery. In comparison, Amico works as a set-top box for your TV while embedding a 3.2-inch, 240p capacitive touchscreen into each of its controllers (two will be included in the box).

The developer portal calls out Qualcomm's Smart Display 200 platform—and specifies its "APQ8053-Lite" model, which includes a 1.8GHz Snapdragon 624, an Adreno 506 GPU, 2GB of LPDDR3 DRAM, 16GB of Flash storage, and built-in controllers for interfaces like HDMI, Wi-Fi, and Bluetooth (but not Ethernet). While prices on bulk-manufactured SoC motherboards can vary for many reasons, this one appears to be available in bulk orders at rates near \$38 per board (though that one includes a camera sensor, which Amico will not have in either its primary box or its controllers).

How much can you do with 1MB?

Each controller has its own SoC which is, unsurprisingly, weaker than the primary hardware. There's also a rotary dial that can double as a d-pad, a series of "shoulder" buttons, a USB Type-C connector, and a built-in battery. Somewhat surprisingly, that list doesn't include any face buttons for players to tap with their thumbs; for "action" inputs, it's shoulder buttons or the touchscreen.

While the controller's battery rating hasn't been revealed, the Amico developer portal hints at the capacity being quite low. Intellivision tells its devs that controllers have various built-in features disabled by default to "preserve battery life" unless games flag them as needed; those features include the gyroscope, accelerometer, and haptic motor.

As previously revealed, each controller's capacitive touchscreen will measure 3.2 inches diagonally with a pixel resolution of 320 x 240 pixels. Now, we know that the screen has a refresh rating described by Intellivision as "15-30+ fps." Amico's developer portal confirms that game content meant to operate primarily on the touchscreen needs to be coded entirely in an HTML/CSS hybrid dubbed "SparkAce" and must not exceed 1 MB in size. That size includes all assets combined, including static images, animations, audio, and each game's "required" startup image for the controller's display. The size limit seems intended to keep file-transfer times between the console and controllers to a minimum, though the dev portal documentation doesn't clarify how long that exchange will take on average for working Amico hardware.

The size limit for controller-specific assets could change ahead of the console's launch—perhaps rising higher, perhaps sinking lower. In the meantime, Amico's SparkAce system includes support for PNG8 images and Ogg Vorbis audio files, which devs will likely rely on for any intensive second-screen gameplay features. Even if the size limit grows, something near 1MB for all assets and scripting implies very simple controller-specific graphics across the board—and that's assuming developers run that interface at any frame rates above 15 fps. Until we see otherwise, we expect simple static images and text prompts on the controller's touchscreen, as opposed to detailed tappable graphics or animated virtual pets.

While the Amico controller spec sheet contains fewer details about its specs and power, it does confirm an Espressif ESP32 SoC at its core. ESP32 SoCs clock in at 240 MHz and are advertised as a low-cost way to drive products in the "wearables" and "Internet-of-things" industries. Bulk orders for ESP32 SoCs can run as low as \$2.50 per chip—though, again, bulk-order estimates can vary wildly beyond what you'll find in a cursory Internet search. The controller in question may still need to be built out with other parts not included in Espressif's board (unless we're missing an all-in-one Espressif product that combines that SoC with an accelerometer, gyroscope, and haptic motor).

"Humor entertains both males and females"

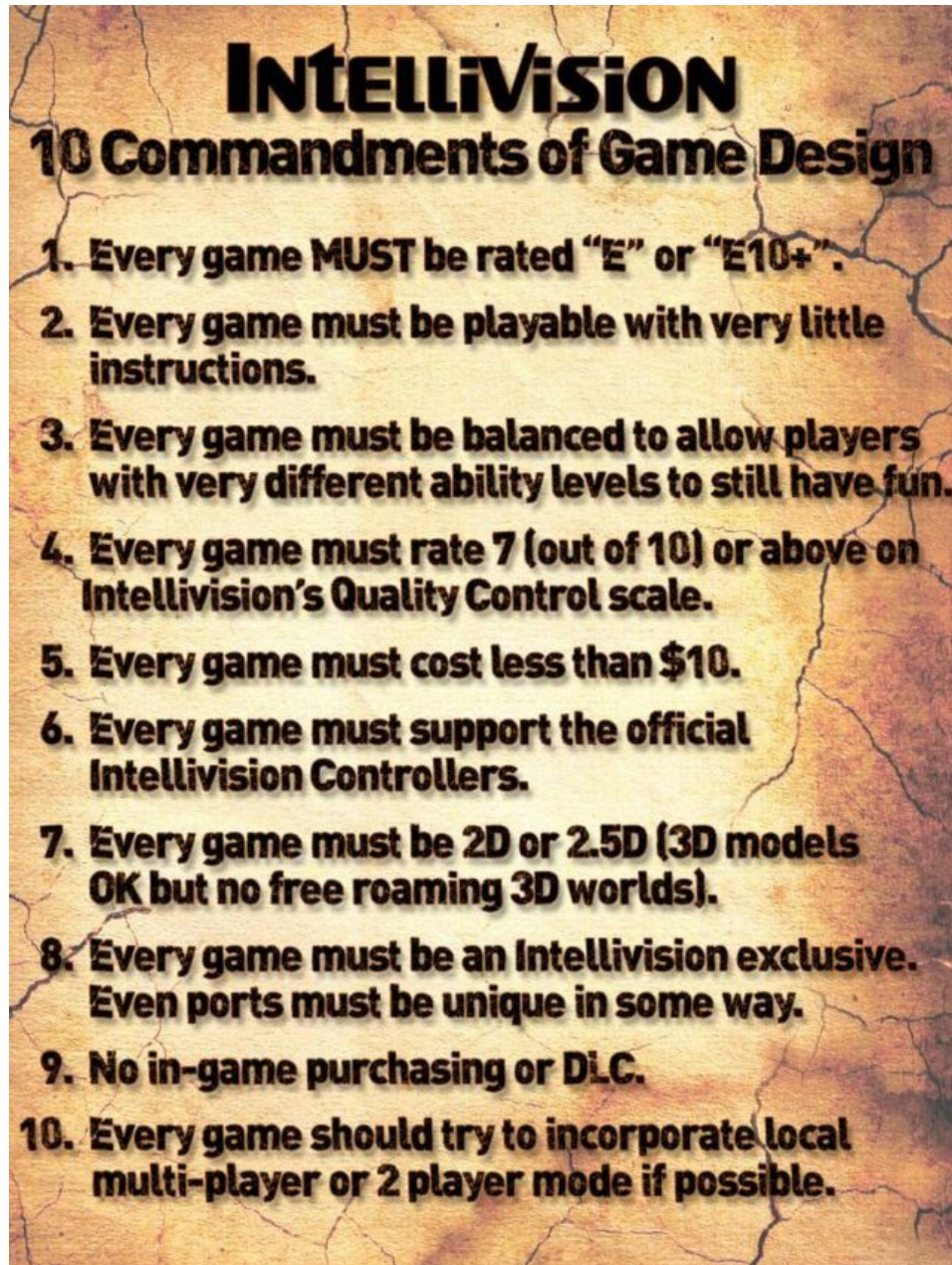
Much of the dev portal revolves around game-design guidelines. These lacked a specific author credit but may have been written by current Intellivision CEO and longtime game music creator Tommy Tallarico. At least one section credits Tallarico directly. Titled "The Ten Commandments of Game Design," the passage begins with this introduction, pasted verbatim:

And lo, Tommy did play a mountain of video games, some good and many bad, and after much reflection, he carved into a tablet a list of game design commandments, and he did present the tablet to the people, and he said unto them,

"Follow these commandments and you will make good games and all will prosper."

And there was much rejoicing.

This is followed by a list of 10 "requirements" for all Amico games, which Tallarico has publicly posted:



[Enlarge](#)

Intellivision.net

Various text prompts in the portal's "guidelines" section read like a Game Design 101 manual as opposed to Amico-specific rules or limitations. They're all archived at the previously shared link, but if you'd simply like a taste of what the text looks like, I will share one unedited segment, titled "THE SECRET SAUCE" in all caps:

The secret sauce to video games is humor, yes even in serious games. Humor is the most difficult thing to do, it doesn't have to be "laugh out loud" but the player should feel amused. Ask yourself if Angry Birds® would be a hit if it was called The Catapult Game (without birds exploding etc.) Add humor to your games and you immediately step away from your competitors as most don't even try. Humor entertains both males and females, so you can double your audience when you entertain both. When you come up with designs,

ask yourself, "Is this for males, or females, or both?" We highly recommend you focus on both, as it doubles the audience of your game before you even start coding!

Reading between the dev portal's lines

Many of Amico's "Ten Commandments" are referenced repeatedly throughout the portal, but one is not: the "Intellivision Quality Control Scale." After combing through the archived dev portal, I only found one subjective clarification, that the scale "touches on all three tenets of sensible, simple, and fun." One rule, buried in the dev portal, mandates no less than 30 fps refreshes in terms of visual performance, which hopefully means the stuttering frame rates in some Amico preview videos will be remedied by the time those games launch. (To be fair, some revealed games appear to run at 60 fps, but we haven't seen whether that performance will translate to final Amico hardware.)

Reading between the lines, we can surmise some of what the console will or won't contain on a system level. Amico will not include a systemwide "achievement" or "trophy" system; instead, Intellivision's portal suggests games offer organic nudges and feedback when players do something successful. The documentation often recommends that games lean on the multicolored light bulbs built into both the physical Amico console and each controller.

One of the sections talks at length about Amico's previously announced plans for online leaderboards, which will include refinement by region and emailed notifications to highest-scoring players after a "season" concludes. However, the development guidelines don't clarify exactly how to build a leaderboard system within a game or how to connect it to Amico's services for the sake of tracking player stats over a span of weeks or months. Additionally, online leaderboard support doesn't appear in any of this portal's lists of Amico game requirements.

Worse, the profit margins for third-party devs on Amico might not be great.

Online multiplayer gaming is not mentioned anywhere in the portal, while one huge development consideration is missing from the above image: a strict attitude about downloadable updates and patches. Intellivision warns its devs that patches should be "a very rare occurrence (a great exception) and not be counted on as a way to extend development time or postpone needed improvements to your game." The same section recommends that game makers "limit the size and scope of your game to what you can test completely."

As seen in the above image, Intellivision caps Amico game prices at \$10, and there's no DLC workaround—"no upselling of downloadable content and no in-app purchases," the guidelines declare. Intellivision also insists that any game sold for Amico should be "a complete, high-quality game [with] hours of fun."

My admittedly subjective response to this restriction is a bit ambivalent. I hate predatory add-on content like loot boxes, and I appreciate one-and-done game purchases. But I also recognize that \$10 as a maximum game price, within an unproven, brand-new digital marketplace, inherently limits the scope of how much a game company can expect to earn from even a highly successful game (and, in turn, how much they can afford to devote to development). A lockdown on patch support also means online multiplayer in Amico games would be inherently difficult to support, since online modes tend to expose issues like character balance and cheat exploits.

Worse, the profit margins for third-party devs on Amico might not be great. In a video shared with Ars Technica that Tallarico filmed as a pitch to angel investors in March 2021, he estimated that Intellivision takes "around 50 percent" of third-party game-sales revenue—well above [the 30 percent cut that has proven controversial for the likes of Apple](#).

When will we really see the Amico difference?

In our preferred Amico universe, we wouldn't have to pick through specs, because we'd either have tangible games to test or ample footage of real-time gameplay. But with less than four months from the console's latest announced launch date of October 10, 2021, we're still waiting to see the Amico difference in action and in person.

Publicly, Intellivision has advertised remakes of '80s games, although that selection leans more into Atari's arcade and console heyday with the likes of *Pong*, *Missile Command*, *Breakout*, and *Moon Patrol*. That approach makes a certain sense, since Mattel's original Intellivision sported a few Atari hits. The remakes' reveals thus far have ranged from thorough to brief in terms of sizzle reels, while apparent "live" gameplay has been limited to the likes of *Evel Knievel* (a port of an existing Android game, and we wonder how that'll be changed to fit into Amico's "exclusive content" policy) and *Moon Patrol* (the Amico-exclusive remake which, as of this March, [looked quite rough](#)).

Amico's E3 2021 presentation was confusing in part because it leaned on a few games that are already available as free web games, particularly [a series of Sesame Street-branded edutainment experiences](#). Other games featured in Amico footage debuted as far back as 2019. But things got weirder just one week after E3. On Tuesday, June 22, Intellivision's marketing team reskinned an August 2019 promotional video tied to that year's Gamescom in Cologne, Germany, and relaunched it with identical filmed interviews and near-identical gameplay footage.

Eurogamer's Digital Foundry reported on the similarity after receiving a press-specific email from Intellivision, and that prompted a DF viewer to [sync the videos and host them side-by-side](#).

While Tallarico has been bullish about [promoting which industry legends are helping get the console off the ground](#), Intellivision's list of participating game makers mostly consists of brand-new or unproven companies. Even its biggest exceptions, including Other Ocean (*#IDAR*) and Choice Provisions (the *Bit.Trip* series), are firmly in the indie realm. The last we heard about plans for an Amico-exclusive sequel to famed 16-bit series *Earthworm Jim* came in the form of [a brief animation demo reel posted in August 2020](#). That video includes one character running through a single backdrop, and the project currently has no release date.

The last time we went around the crowdfunded console merry-go-round so publicly was 2013's [Ouya](#). That \$100 micro-console was bullish about access points like free game demo downloads, critically acclaimed indie exclusives, and wholly open Android access. Ouya's openness and price point were highlights, but a lousy packed-in controller, uneven processing performance, and a lack of market buy-in doomed it to [a mere two years of life](#).

Intellivision: "The Wii U failed miserably"

The archived dev portal itself includes a quizzical admission about Amico's sales pitch that's tucked into the end of a section suggesting devs should leverage each controller's included touchscreen:

Having a touchscreen and physical buttons and input disc has also not been utilized (the Wii U failed miserably). [sic]

The "input disc," to clarify, is a variation on the standard d-pad that can either be pressed down like a d-pad (albeit without fixed points to guarantee which direction you're pushing) or spun like a disc (which would emulate a rarely seen control method found in arcade classics like *Tempest*). By directly referencing a Nintendo console, Intellivision invites a painful question: does an "input disc" truly differentiate Amico enough from something like the Wii U, a console that "failed" (at least relative to Nintendo's usual output) in spite of its own family-friendly reputation and critically-beloved, local-multiplayer darlings like [Mario Kart 8](#) and [Super Mario 3D World](#)?

The console may ultimately have more time to answer that question, as Tallarico recently hinted at yet another hardware delay. When asked by Ars whether Amico's October 10 date was still in the cards, [Tallarico replied on Twitter](#): "We have 'til the end of July to source the missing and scarce components to manufacture. Same thing every company is going through. We started securing last November. We hope to begin production by July. It is somewhat out of our hands at this time."

It's already taken this long to get even this much of a glimpse into Amico's hardware, but the info included in this dev portal only scratches the Amico surface. For starters, questions linger about the team behind the console's creation and production. In one example, Intellivision trumpeted its hiring of original Xbox chief J. Allard as "global managing director" in May 2020, saying he would "take charge of a wide variety of operations that are critical in launching" Amico. He left months later and [said the role was "not a good fit."](#) In response, [Tallarico alleged Allard was still involved](#).

The Amico team could also be in regulatory hot water if its timeline and association with J. Allard isn't resolved. A [March 2021 video presentation to angel investors](#) via [Republic.co](#), which was recorded after Allard's last public statement about Amico and reviewed by Ars Technica, includes a pledge that "the co-founder of Xbox... has been making huge, huge contributions" to the Amico team. Worth noting: the system was originally scheduled to launch in October 2020, five months before that solicitation to investors was filmed, and Tallarico's video didn't disclose that delay to said investors.

We look forward to going hands-on with real Amico hardware should that opportunity arise, since we're no strangers to how specs don't necessarily add up to quality and fun in the games industry. In the meantime, if Amico is seriously landing as early as October 10, it needs to put those intangible fun-factor elements out in the wild to some degree—and it needs to do so fast.



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